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DON Achieves Success at World Radiocommunication Conference 2007

The World Radiocommunication Conference (WRC) 2007, held from mid-October to mid-November in Geneva, Switzerland, was a great success for the Department of the Navy (DON) and the Department of Defense (DoD).

By Thomas Kidd - January-March 2008

The WRC is held every four years to review and update the International Telecommunications Union (ITU) Radio Regulations, the international treaty governing the use of radio-frequency spectrum and satellite orbits. Working within the U.S. delegation, the DON team that participated in the conference assured key agenda items were resolved to the benefit of the Department. There were many successes and a few compromises during this four-week conference that some call the "wireless Olympics."

The issues decided at the conference were arranged as agenda items (AI), several of which were key to Navy and Marine Corps operations. For example, AI 1.4 was critical to DON radar systems, while AI 1.5 had a significant impact on departmental flight test telemetry.

AI 1.6, if not carefully handled, could have resulted in limitations to the Joint Tactical Information Distribution System (JTIDS).

AI 1.13 sought to reallocate portions of the spectrum used for DON long-haul communications while AIs 1.14 and 1.16 established a global framework for identification and distress systems affecting Maritime Domain Awareness (MDA). Also critical to the DON was AI 7.2, which established the agenda for WRC 2011.

The following is a brief summary of these agenda items.

• AI 1.4 – Identification of spectrum for International Mobile Telecommunication (IMT) services. This agenda item sought to identify spectrum for next generation cellular telephone services. Many frequency bands were proposed, each with its own technical pros and cons.

Developing nations were interested in lower frequency bands that enable greater geographic coverage with less infrastructure investment. The developed nations sought higher frequency bands to deliver broadband Internet capabilities to households and handsets.

Caught in the middle was a frequency band used by DON radars (3400 – 3600 MHz). Through a strong alliance with the Fixed Satellite Service community, the Department was able to delay a WRC decision on the frequency band until the last hours of the conference. This tactic successfully enabled the U.S. WRC-07 ambassador to craft an agreement among nations not to identify the frequency band for IMT.

• AI 1.5 – Allocation of spectrum for Flight Test Telemetry. Military and civilian aircraft flight testing places extraordinary demands on wireless systems, sending sensor data to test ranges around the world. Considered by some to be one of the greatest overall successes at this WRC, the advocates for additional spectrum succeeded in identifying sufficient bandwidth to accommodate higher quality and greater detail in flight test telemetry than originally anticipated. The culmination of more than a decade's work, DON flight test ranges will now have the ability to accommodate more robust scenarios.

• AI 1.6 – Increased spectrum allocations for Civil Aeronautical Mobile applications. Several radio frequency bands were considered and adopted to satisfy the intent of this agenda item. The U.S. delegation protected the Department's JTIDS operations by assuring new systems in the frequency band conform to standards set by the International Civil Aviation Organization (ICAO).

Through this carefully crafted strategy, the U.S. delegation was able to indirectly protect this critical system while avoiding a potentially complex and politically charged debate within this United Nations forum.

• AI 1.13 – Allocation of spectrum to radio broadcasters. The unique characteristic of the high frequency (HF) radio spectrum to reach across vast distances and communicate around the world

BARISAL, Bangladesh - Nov. 27, 2007 - U.S. Marine Cpl. Laura Buckingham, assigned to the 22nd Marine Expeditionary Unit (Special Operations Capable), which is embarked aboard USS Kearsarge (LHD 3), sets up a satellite. Kearsarge and the 22nd MEU (SOC) are conducting humanitarian assistance/disaster relief efforts in response to the Government of Bangladesh's request for assistance after Tropical Cyclone Sidr struck their southern coast. U.S. Navy photo by Mass Communication Specialist 3rd Class William S. Parker.

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frequency (HF) radio spectrum to reach across vast distances and communicate around the world without the need for satellites or terrestrial infrastructure is of great value to the DON.

Through this agenda item, the international broadcasting community was seeking to reallocate a portion of the HF spectrum away from the current users, including the DON.

Following several weeks of debate on the floor of the conference, the proponents of this agenda item were unable to achieve consensus. With the concurrence of the proponents of this agenda item, conference delegates decided that there would be no change to the Radio Regulations and no spectrum would be reallocated to the broadcast service.

• AI 1.14 and AI 1.16 – The review of requirements and procedures for the Global Maritime Distress and Safety System (GMDSS) and the review of regulatory and operational provisions for Maritime Mobile Service Identity (MMSI). Together these two agenda items represent significant advancements in international procedures affecting the Department's successful implementation of Maritime Domain Awareness.

The DON took on a leadership role when the U.S. WRC-07 ambassador nominated a DON member of the delegation, Mr. Steve Ward, to chair the sub-working groups for each of these agenda items. More than 300 changes and updates to the regulatory procedures and operational provisions of the international treaty language for global implementation of GMDSS and MMSI were made.

• AI 7.2 – Agenda items for WRC-11 and WRC-15. A critical and potentially contentious agenda item of any WRC is the establishment of future WRC agenda items. More than 100 proposals were considered and 25 were selected for the next WRC in 2011.

Several of these WRC-11 agenda items are of particular interest to the DON. They include consideration of software defined radios; spectrum allocations to support unmanned aerial systems; enhancements to the international regulatory framework to accommodate emerging and future radio technology; spectrum requirements for ship and port security; and allocations for sea state and other radar functions.

Other agenda items will require greater study to determine their potential effects on and opportunities for the DON.

In addition to these agenda items critical to the Department, there were many other issues resolved at this WRC. Approximately 3,000 delegates from 191 national delegations and 700 private sector and associate members met for just over a month.

The work of the conference occupied 12- to 16-hour days, seven days a week, and resulted in hundreds of major and minor changes to the Radio Regulations.

The completed Final Acts, the book that contains the results of the conference, will not be published for several months, but additional details of the conference are available on the ITU Web site at http://www.itu.int/ITU-R/go/wrc/en.

The successes attained at WRC-07 would not have been possible without the support provided by the entire DON spectrum team consisting of members from within the office of the DON CIO and across the Navy and Marine Corps. One of our members, Mr. Alan Renshaw, will be retiring from the DON CIO spectrum team after many decades of dedicated service to the DoD, the DON and the global spectrum community at large.

Mr. Renshaw has been a member of six World Radiocommunication Conference delegations and is directly responsible for many improvements in international radio regulations that are critical to the DON. We wish him fair winds and following seas as he embarks on a well-deserved retirement.

Tom Kidd is the director for DON Strategic Spectrum Policy for the Department of the Navy Chief Information Officer.

TAGS: Spectrum, Telecommunications, Wireless

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